

J. Walden

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The Southern Agriculturist.

(NEW SERIES.)

Vol. VI.

FOR FEBRUARY, 1846.

No. 2.

For the Southern Agriculturist.

ON CULTIVATING FRUIT TREES.

Mr. Editor :—Believing that the taste for cultivating fruits to be very much increased, though still very far short of what it ought to be, I am willing to afford to those wishing to commence, or desirous of a little more information, the little I have learned in that best of schools, experience. I will premise what I have to say, by stating, that it is useless to expect fruit trees to furnish their abundant and luscious crops, without a liberal supply of manure and careful attendance in keeping down weeds, &c. My practice is, every autumn as early as convenient, to give every fruit tree a liberal dressing of fresh stable or cow-pen manure, applied to the surface of the ground, to be washed in by the rains of winter, and occasionally scratched in by fowls. I have heretofore been averse to manuring my stone fruit trees from prejudice, but the quantity and quality of the fruit of such of my trees as had, unintentionally, a very liberal dressing last spring, that this year, at least, and probably hereafter, they shall have their share as well as the apple and pear trees. I find upon reading, that my practice is sanctioned by the highest French authorities. Le Bon Jardinier says, that peach trees must have a good supply of manure every three or four years, and Noisette & Boitard, in their Manuel du Jardinier des Primeurs, say “that it is not enough “to have prepared the land by trenching and manuring, when a trellis “of peach trees has been planted, the fertility of the soil must be “kept up by covering it every spring with three or four inches of “rather rotted manure, which is to be turned in, in the fall at the “last working.”

The next thing I would advise any one wishing to commence or increase the cultivation of the pear and the apple, is to set out a good quantity of cuttings of the quince, and some slow growing

apple trees. The best cuttings are about 9 to 15 or 18 inches off the ends of the small limbs or shoots, and if about half an inch of the wood of the previous growth can be retained, it will be much better. These are to be placed obliquely in a piece of rich, deep and rather moist land, in rows about two feet apart, and one foot apart in the rows, from six to twelve inches deep, the lower end of the cuttings touching the hard bottom of the trench and resting against the back of it. Press the earth well with the foot, around the bottom of the cuttings especially; do not fill up the trench entirely, and if all could then be covered well with green moss or straw, or leaves from the woods, or even pine-trash, they will be much more sure to take root. All that then will be required, will be to keep down grass and weeds, and stir the surface occasionally if it becomes too hard; a little watering once in awhile, if the spring is dry, will be of much service. Such as take root will be ready to receive scions about mid-summer.

Budding or inoculation, has two advantages over grafting, which are greater economy of the wood you have to propagate from, if it is scarce, and even if it fails, your stock is not injured, but may be used again as soon as you discover that your inoculation has failed. But where neither scions or stocks are scarce, I prefer the common cleft grafting, performed below ground, as the most simple, most expeditious, and I think also the most certain of success. This is performed by taking the earth away from around your stock about two inches or more deep, then cut off the stock with a sharp knife or pruning shears an inch or an inch and a half below the level of the ground, split open in the middle about one inch or more deep with the knife, then take your scion, which ought if possible, to be the end of the shoot, and have the terminal or end bud on, as it makes the handsomer tree, sharpen the lower end like a wedge, except that one edge must be a little thicker than the other, insert it in the cleft of the stock, which is kept open by the knife, with the thickest edge outside fitting the inner barks of the stock and scion as nearly as possible, on one side at least, or if you are doubtful about this, insert it a little obliquely, the upper or lower end of the scion being a little too much in, and the other end a little too much out. No bandaging will be necessary; then draw the earth back again carefully around the graft and let it be a little higher than it was before.

Grafting either above or below ground may be done almost any month in the year, except probably October and November. In

grafting above ground, I have never used any clay or wax, but merely wrapt my graft carefully with coarse cotton yarn, which is the cheapest material I can use, though woollen yarn or strips of cheap cloth would answer equally well.

If you wish very dwarfish pear trees, cut out a fruit spur exactly as you would a leaf bud, and bud it in like a bud ; or graft a short limb or shoot having fruit spurs principally on it, it will also come into bearing very soon. I have some trees treated so, that are not three feet high, that will certainly blossom next spring, and may bear fruit. By proceeding thus, you will have fruit generally quite as early from trees of your own grafting, as from trees that you may import either from the North or from Europe, and sometimes much earlier, as I know of one peach tree at least, that has never borne fruit, though it was imported from the North about twenty years ago, while scions taken from it have borne long since. If larger trees are desired, use for scions the water sprouts, or vigorous shoots from the centre of the tree.

I recommend the quince as stocks for pears, because they come into bearing much earlier, bear larger crops of fruit in proportion to the size of the trees, and frequently finer fruit than when upon pear roots. Also in all our low country, I would advise that fruit trees should be planted in the vegetable garden, where they will not interfere with the cultivation of the vegetables, will be kept clean by cultivating the vegetables around them, and some fruit may be saved from the numberless pilferers we are exposed to. Such trees may be placed ten to fifteen feet apart, by which means a small garden will furnish a great variety of fruit at very little if any extra expense. There are only a few varieties of pears that do not succeed grafted upon the quince, these are *Salviati*, *Beurré d'Angleterre*, *Bergamotte Sylvange*, *Jalousie*, *Virgouleuse* and a few others ; and there are others equally good that do quite well. Another merit of the quince stock is, that it is not so particular about the soil in which it grows, only requiring a liberal supply of manure, as the pear, which in some soils seldom ever bears any fruit at all. There are several varieties of the quince, the one used for dwarf trees being quite a dwarfish kind, with very small leaves and apple shaped fruit ; while the common varieties with us are of much larger growth, have larger leaves, and have the fruit either apple or pear shaped, of which the former is the more vigorous and bears the best quinces.

The pear seems in our country to succeed best in a rather stiff clayey soil, and salt seems to check the growth of wood and conduce to fruitfulness, while in a sandy soil it will sometimes grow very vigorously and bear little or nothing.

The apple tree is dwarfed by budding or grafting upon the Paradise apple, which is propagated by suckers, cuttings or layers. When grafted upon what the French call the Doucin stock, it is more productive, and of a more convenient size than either the dwarf or full standard. Any small growing apple would answer equally well for stocks and could easily be propagated by layers if not by cuttings.

C.

From the Southern Cultivator.

FRUITS AND FRUIT TREES.

December is the best time, in the Southern States, for transplanting fruit trees; and as we believe more attention than heretofore is about to be given to this business, we have thought that directions for planting, together with lists of good sorts, might be acceptable to the readers of the Cultivator. We condense what follows, to bring it within the compass of our paper, from the best authorities extant, chiefly from Downing, adapting it, as much as possible, to the use of the Southern States, by engrafting on it the results of our own experience, which has been somewhat extensive during the last ten years.

In taking trees up, it should never be forgotten that the delicate and tender points of the roots, usually white and swollen, are the organs by which food is taken up from the soil for the nourishment of the tree. These should be preserved as much as possible, the chance of perfect success being lessened by every one of these points that is bruised or destroyed. Where it becomes necessary to cut large roots, the cut end should be made perfectly smooth with a sharp knife. Where the roots are gotten up without much injury, very little trimming of the top is necessary. If the trees cannot be planted immediately, they will be greatly benefited by dipping the roots in water and rolling the wet roots in the soil, so that a coat of it shall adhere to them, and then covering them with mats. They should never be allowed to become dry. If the trees are to be carried to any great distance, their roots should be carefully packed in wet moss.

In planting, the almost universal habit of the South, of looking upon a tree to be planted pretty much as on a fence post, and of treating it accordingly, must be corrected. The whole of the ground intended for an orchard should be rich, except for peach trees, and

should be stirred, either by subsoiling or by trenching, to the depth of at least two feet. The holes for the trees should be dug out two feet deep at least, and four or five feet square, the subsoil removed, and its place supplied by surface soil, and with this filled up within as many inches of the top as will allow the tree to stand exactly as it stood in the nursery—the whole art consisting essentially in placing the roots as nearly as possible as they were before. Set the tree, and fill in among the roots with the soft surface soil, enriched, if necessary, with a mixture of charcoal dust, barn-yard—not stable yard—manure, and slaked lime. Pour a tubful of water about the tree, and this will settle the earth far better among the roots than the usual practice of shaking the tree and treading the soil around it. Set a stake by the tree and tie the tree to it with a hay band, and finish by covering the ground for four or five feet around the tree with coarse straw, litter from the barn-yard, or leaves from the forest.

The proper size of trees for transplanting is a very important matter. It is clearly settled by both theory and practice, that health, vigor and duration are all best promoted by selecting small trees from three to six or seven feet high. Such trees planted as herein directed, make wood rapidly, and come very soon into a state of healthy and long continued productiveness.

There is trouble in all this! So there is. But what earthly enjoyment that is worth anything is to be had without trouble? Let any one plant an orchard according to these directions, and in a few years, if he take any pleasure in seeing the work of his hands prosper, he will not regret the trouble his orchard has cost him—more especially if he remember in the mean time that it is an indispensable requisite in all young orchards to keep the ground mellow and clean by cultivation for the first few years, until the trees are firmly established in the soil.

We must not omit to remark that if any one intends to engage in fruit raising, either for consumption on his own table, or for the benefit of his stock, or for market, and wishes to have *good* fruit and thirty trees as the result of his labor, he must first of all, make himself acquainted with the principles of Horticulture. The study of this branch of science is a delightful recreation, and the application of its principles to practice, is still more delightful. For the theory, we beg leave to recommend—

Lindley's Outline of the Principles of Horticulture.

Lindley's Theory of Horticulture, by Downing.

For the practice—

Kenrick's American Orchardist.

Downing's Fruits and Fruit Trees of America.

APPLES.

In the Southern States apple trees should be planted in a deep, damp, loose loam, of calcareous or limestone character, with a northern exposure. The rich alluvions of our rivers and creeks, not

subject to be overflowed, would furnish the very best location for apple orchards. Steep, rocky, north hill-sides, of strong soil, would be perhaps the next best. The distance of the trees apart should be at least forty feet. And such sorts should be selected as are known to succeed in the neighborhood. For there is hardly any tree so local in its character as the apple. The Baldwin and Roxbury Russet succeed well only in Massachusetts—Peck's Pleasant and Seek-no farther, are best in Connecticut—the Spitzenburg and Newton pippins, in New-York—the Bellflower and the Rambo, in Pennsylvania. English apples do not succeed well in the United States; and American sorts planted in England lose their high flavor. In 1832, we brought from Ohio some very fine sorts—they are now growing in our grounds, but they have never answered our expectations, notwithstanding all our care of them. In the Northern and Middle States every neighborhood almost has its favorite varieties, which will not elsewhere come up to their high character at home. So too is it in the Southern States, with the exception of the horse and red June apples. They flourish everywhere, we believe, with proper treatment. Hence we do not furnish a list of apples, but leave every one, as ensuring the best success, to make a selection of those that have been tried, and are therefore known to do well in his immediate neighborhood. Yet we would advise every one to set about getting a good apple orchard—not indeed for the reason assigned by Dr. Johnson to one of his friends:—"I know a clergyman," said he, "of small income, who brought up a family very respectably, which he chiefly fed on apple-dumplings." That happened in England—but, thanks to the men of '76, no such hardship need befall any one in this country—clergymen or laymen. We place our advice on the ground of the exceeding great usefulness of the apple, on the table, in the kitchen, as an article of food for cows, horses and hogs, and as an article of commerce.

PEARS.

Formerly, the pear was not very highly esteemed. In its wild state it is extremely austere: and even the pear which has been removed only one step from savagery—the choke pear—considered by many as the type of this sort of fruit, lays hold of the mouth and throat with a grip rather more severe than a green persimmon. And besides, the late bearing of most of the common sorts had given rise to the saying:

"He that plants pears,
Plants for his heirs."

But within the last sixty years, through the exertions of Van Mons, Knight, and others, the pear has been so greatly improved, in all respects, as to be styled the queen of fruits in temperate latitudes. Van Mons devoted the whole of his life to the improvement of the pear; and, from 80,000 seedlings which he raised, he got a number of varieties of high excellence. Mr. Knight, by crossing, has added many others to the list of fine sorts; and some

of the very best are the production of nature, having been found growing in hedges and meadows. In all, there are between 800 and 1,000 sorts that are esteemed good. But of all these, only about twenty are really first-rate.

The best soil for the pear is a strong loam, of moderate depth, on a dry subsoil.

If trees are wanted for an orchard, those grafted on pear stocks should be procured—for the garden, those on quince stocks should be preferred, as they make dwarfs, and come into bearing very soon. We have had trees on quince stocks to bear when only about three feet high—and large crops have grown on those that were only about ten feet. In the orchard, plant thirty feet apart—in the garden plant dwarfs, if Quenouille training is intended, six feet; otherwise, ten feet apart.

In gathering pears, it should be always remembered that most varieties are much finer in flavor, if picked from the tree and ripened in the house. There are many varieties, Mr. Downing says, that are only second or third rate, when ripened on the tree, but have the highest and richest flavor if gathered at the proper time and allowed to become mellow in the house. Winter pears, however, require a somewhat different treatment. They should be allowed to hang on the tree till the nights become frosty, and when gathered they should be wrapped separately in paper, packed in barrels, and put away in a cool room, until within about two weeks of the time when they usually become mellow, then be brought into a warm room and be there allowed to mature perfectly.

Class I.—*Summer Pears.*

Bloodgood.	*Jargonelle,
*Bartlett, or William's Bon Chretien,	Julienne,
	*Madeleine,
*Dearborn's Seedling,	*Rousselet de Rheims,
Green Chisel,	*Summer Franc Real.

Class II.—*Autumn Pears.*

Andrews,	*Frederic de Wurtenburg,
Althorpe Crassanne,	*Golden Beurre of Bilboa,
Belle et Bonne,	Heathcot,
Beurre de Capiaumont,	Hacon's Incomparable,
*Beurre Brown,	*Louise Bonne de Jersey,
*Beurre Bosc,	*Marie Louise,
*Beurre Diel,	Napoleon,
Bergamot, Gansel's,	*St. Ghislain,
Cushing,	Seckel,
*Dix,	Stevens' Genesse,
*Douchesse d'Angouleme,	*Surpasse Marie Louise,
*Doyenne, white or St. Michael's,	*Surpasse Virgaleau,
Flemish Beauty,	Van Mons Leon de Clere,
	*Washington.

Class III.—*Winter Pears.*

Beurre d'Aremberg,	*Glout Morceau,
Beurre Ranz,	*Jaminette, or Josephine,
*Black Worcester,	Louise Bonne,
Bon Chretien Spanish,	*Passe Colmar,
Columbia,	Vicar of Winkfield, or Clion,
*Chaumontel,	* Winter Nelis.

Those pears in the preceding list marked thus (*) have borne fruit in our grounds, and they fully sustain here the character given to them by Manning, Kenrick, Downing, and others. And in this list are included those that are esteemed to be the very best in Europe and the United States. They can all be purchased in Northern nurseries, at from 25 to 100 cents per tree, and can be safely sent to any part of the country.

PEACHES.

As we remarked on a former occasion, this fruit has been so much neglected in the Southern States, as to have become comparatively worthless. Even the brandy that is made of it, compared with what was made thirty years ago, is often little better than blue ruin or cocklebur whiskey. It is, in reality, slowly falling back into its original poisonous character. No one who has tasted the fine sorts grown in New Jersey and Delaware, can ever afterwards relish the miserable trash that is too often allowed to grow in Southern orchards. Even as food for hogs, it would be for every one's interest to get good sorts and cultivate them carefully.

Every body knows the kind of soil the peach tree grows best in—and every one knows that no tree is more easily propagated. From the stone in one year, trees may be raised large enough for budding. And every one may learn, in five minutes, how to bud a peach tree, either from the books or from one who understands the process. Get good kinds and go to work, and in three years orchards may be had to any extent, that will be worth something. We add a list of kinds, about the high qualities of which there is no dispute. To praise them would be to "gild refined gold." But unless they are properly taken care of, it will be all labor thrown away. The ground should be ploughed and kept clean, and the trees carefully pruned every year according to the system of shortening in, that is, cutting off, in January, half the last year's growth over the whole outside of the tree, and also upon the inner branches, cutting always close to a leaf-bud: the object of this pruning being to diminish the crop one-half, make every peach double the usual size, and of superior flavor, and furnish a large supply of strong bearing wood for next year.

Commercial gardeners usually sell peach trees at about 25 cents each. Those marked (*) we have tried, and know to be good.

Class I.—*Freestone Peaches with pale flesh.*

*Bellegarde or red Magdalen,	*Morris' Red Rareripe,
Brevoort's Seedling Melter,	*Morris' White do.,
*Belle de Vitry,	*Morrisania Pound,
Early York,	Malta,
Early Newington,	*Noblesse,
*Early Admirable,	Oldmixon,
George the Fourth,	Royal George,
*Grosse Mignonne,	*Red Rareripe,
Late Admirable,	*Snow, or white blossom.

Class II.—*Freestone Peaches with deep yellow flesh.*

Abricotte, or yellow Admirable,	*Red Cheek Malocoton,
*Crawford's early Malocoton,	Yellow Alberge,
*Columbia, or Pace,	Yellow Rareripe,
Crawford's late Malocoton,	

Class III.—*Pavies, or Clingstone Peaches.*

*Blood Clingstone,	Late yellow Alberge,
*Catharine,	Oldmixon,
*Heath, or "white English" of	*Old Newington,
our orchards,	Pavie de Pompone,
*Incomparable Admirable,	Tippecanoe,
*Lemon Clingstone,	

PLUMS.

The plum is one of the hardiest of fruit trees, and requires not near so much care in the cultivation as the apple, pear and peach. It succeeds best when planted in a heavy loam, or in a soil containing a large proportion of clay. Where the soil is sandy it should be thoroughly mixed with clay, and enriched with swamp muck. Mr. Downing says he has found common salt to be one of the best fertilizers for the plum. The most successful plum grower in his neighborhood, he says, applies, with the best results, half a peck of coarse salt to the surface of the ground under each bearing tree, annually, about the first of April.

Grafted on seedling stocks of the common Chickasaw plum of our fields, under the surface of the ground, it makes a beautiful dwarf tree for the garden, comes very soon into bearing, and produces very large crops of very fine fruit.

The most effectual protection against the attacks of the curculio is to catch and kill the insect. About a week after the trees are out of blossom, commence the war. Every evening for about a month, spread a white cloth under the tree, then jar the tree by striking the body of it with the hand. The curculio will double himself up and fall on the cloth as if dead, appearing very much like a dead bud of

the tree. On close examination he is readily distinguished from the buds that fall with him, and may be caught and crushed. Of all the methods recommended that we have tried, and we have tried the most of them, this is, by far, the most effectual.

In the following list, those marked thus (*) have fruited in our garden, and we know them to be good :

Class I.—*Green, White or Yellow Plums.*

Buel's Favorite,	Jefferson,
*Bingham,	*Large Green Drying,
*Coe's Golden Drop,	*Washington, Bolmer's,
Dana's Yellow Gage,	*White Magnum Bonum,
*Green Gage,	Prince's Yellow Gage,
*Huling's Superb,	*Semiana.
*Imperial Gage,	

Class II.—*Red, Blue or Purple Plums.*

*Brevoort's Purple Bolmer,	*Horse Plum,
Blue Imperatrice,	*Italian Damask,
Cooper's Large Red,	*Orleans, Smith's,
Columbian Gage,	*Purple Gage, or Reine Claude
*Damson, Common,	Violette,
*Duane's Purple,	*Quetsche, or German Prune,
Diamond,	Red Magnum Bonum,
Elfrey,	Royale Hative,
Frost Gage,	*Sharp's Emperor.

The usual price of plum trees in the commercial gardens is from 50 to 100 cents per tree.

Results of experiments in the cultivation of the Pear Tree in the Southern States ; with some remarks on the diacious character of the Strawberry. By ROBT. CHISOLM, Esq., Secretary of the Beaufort Agricultural Society, Beaufort, S. C.

As I have, this summer, for the first time, gathered fruit from pear trees I imported from Europe a few years since, I have thought that the results of my experiments, as obtained thus far, might be interesting to you, and encourage those who have begun already to cultivate this fruit to continue, and induce others to begin at once.

My situation is on what is called a Sea-Island, where fine long-cotton is grown, near this place, in sight of the ocean, across St. Helena Sound. The land, on which are my trees, is low, being very near and very little above high tide mark, cold clay, and originally very poor when I planted the trees. I dug holes in the clay about two and a half to three feet across, and about eighteen to

twenty-four inches deep, into which my trees were set at the proper depth, and then filled in with one part of black mould and partially decomposed oyster shells, taken from small mounds near ancient Indian wigwams, and two parts of mould from under trees in the woods or forest; (live-oak furnishes the best mould that I can get.) I had one St. Germain weighing one pound and one ounce; several weighing one pound, and a little more and less; one Bergamotte de Soulers or Solers, weighing nearly three quarters of a pound, the only one I have weighed, and without any selection whatever, as it is the only one I have before me and not selected; the others would probably average nearly half a pound. The BonChrétien d'hiver I have not weighed, but nearly as large; Virgouleuse, (true French,) Crassane and Epargne, about the same sizes; Epine d'Eté, Muscat Robert, Rousselet de Rheims, Grosse Marquise, Martin Sec, Imperial, and a few others that I did not have the names of. The St. Germain, Virgoulouse, Winter BonChrétien, and Bergamotte, have been pronounced very fine pears, and I would willingly compound never to eat better fruit on condition of never having worse. The Epargne was mealy and tasteless, probably in consequence of having been allowed to ripen on the tree. The Summer Thorn was musky, but not particularly sweet. The Muscat Robert was much better, but of the others, except the Crassane, which was not very sweet but a little astringent, I could form no decided opinion, as they did not come to perfection. Of the Messire Jean, I had a number upon the trees, but they were all cracked, and I did not have one that was either ripe or good; probably the soil was too clayey for them. The Summer Thorn, Muscat Robert, and Epargne, were ripe just as peaches were going out of season, the beginning of August. The BonChrétien, St. Germain, Bergamotte de Soulers, and Virgouleuse, are all picked and full ripe now, but this has been an early season for fruits.

I hope next summer to have about thirty or more varieties in bearing, when I can again inform you of their qualities, &c., better. I have imported also apple trees which bear very fine fruit, but I cannot give any very exact account of them, as I visit my garden and plantation but once a week, and then have a plenty to attend to. I have not had one mealy or insipid one. The trees thus far are very healthy.

I find my trees much more clean, healthy looking and vigorous, than pear trees growing in this place, where the soil is high, dry and sandy. I forgot to mention above that my trees are well manured every autumn with stable or cow-pen compost, spread on the surface, and allowed to remain there, and the land is well manured and cultivated in vegetables. I weighed one pomegranate, (not as large apparently as some I gathered later,) and it weighed two pounds five ounces; and I think I have some that will weigh more when gathered.

Seeing that the question about strawberry plants being perfect or imperfect, is still unsettled in the public mind, I was forcibly struck

with the strong confirmation of Mr. Longworth's assertion by Mr. Keen, in the cultivation of the strawberry, as quoted by Loudon in his *Encyclopedia of Gardening*, edition of 1822, page 822, § 1476, var. the Hautboy. As the truth is doubtless your object, you will render a service to the growers of this delightful fruit, by publishing what Keen says on the subject, though it militates against your opinion. I have never seen either a male or perfect flower on any plant of your seedling, which I have been cultivating since about the time that Mr. Longworth's statement was first published in the *Cultivator*, and a friend, to whom I sent some of the plants last year or the year before, remarked to me last week in Charleston, that he had never seen so unproductive a variety of strawberry. I did not send him any other plants, nor did I apprise him of the fact, that for a good crop from them, it was necessary to have some other variety with male flowers in the immediate neighborhood of these plants.

I forgot to mention that I saw somewhere last winter, in Liebig, I think, that salt litter in the winter is beneficial to strawberry plants, and I attribute part of my success in raising strawberries to the saltiness, as well as the moisture and clayey texture of my soil.

Beaufort, S. C., Nov. 1, 1845.

We are highly grateful to receive the communication of our correspondent, detailing his experiments with the cultivation of the pear tree, because the success which has followed his efforts, will tend to induce others to introduce this most valuable fruit into the gardens of the Southern States, where till lately it was thought by many the pear would not succeed. In the south of France, the pear in most places grows well, and produces fine fruit, and we see no reason why similar success should not follow in the southern portion of our own country, with a similar climate, and a good soil. The experiment of Mr. Chisolm shows that success will attend every judicious and well-directed effort. We shall wait with much interest the results of another year's experiments, which, we trust, our correspondent will not omit to send us, agreeably to his intimations.

In regard to the strawberry, we should have no objection to publish the article by Mr. Keen, were it not familiar to many of our readers, and that it refers wholly to the *Hautbois* strawberry, a variety which is universally acknowledged as dioecious. If, however, we find an opportunity, we will give Mr. Keen's remarks in a future number. We do not think that one word can be found in any thing Mr. Keen ever wrote in relation to strawberries, about the dioecious character of any other variety than the *Hautbois*, through our friend, Mr. Longworth, continually insists upon the male and female plants of Keen's Seedling.

It has always been our greatest wish to see the strawberry extensively cultivated, and we believe all will give us the credit for this, after the many years devoted to their culture, and the production of ~~two~~ seedlings which are of such acknowledged merit. Our views

upon the unsettled question, of sterile and fertile plants, have already been given, on several occasions, and in regard to our Seedling, more particularly at p. 293. We there stated, that from some cause, whatever it might be, in certain soils and seasons, it would not produce fruit unless placed near some staminate variety, and we always advised the planting of such in near proximity; being convinced that a large and certain crop of fruit would be the result. It is in this view that we look upon the Boston Pine as quite invaluable, as this variety and the Seedling produced an immense crop side by side, and at least *five hundred* feet from any other strawberry.

[*Editor of Magazine of Horticulture.*

RECLAIMING SWAMPS.

*To the President and Standing Committee of the Rhode Island
Society for the encouragement of Domestic Industry.*

Gentlemen:—In the remarks which follow, I have attempted to give the results of my experience in reclaiming peat swamps, in which I have been very successful.

Agriculture has been the principal business of my life. Being a practical farmer, I have made many experiments in the raising of vegetables and the use of manure; but I will now give my views upon the reclaiming of low land by the construction of blind ditches, in which I have had many years experience.

On my farm there were several cold, wet swamps, the income of which would not pay the expenses of hauling the cattle out of the mire in the spring, when they are so anxious to get the green grass that grows in the mud holes. To prevent my cattle from getting mired, I caused ditches to be dug through the swamps and left open. This did not, however, prevent the cattle getting mired, nor improve the quality of the grass, except for a few feet from the ditches. I endeavored to keep the ditches open, but they only answered the purpose of carrying off the rain water, and left all the cold spring water, that I desired to get rid of. Where subterranean ditches have been properly made and covered, there has not been the least difficulty in ridding the swamps of spring water. Swamps thus drained, have never been affected by wet seasons; in fact, some of my swamps, which were once beds of mire in the spring of the year, may now be ploughed and planted as early as any other land.

I commenced my experiments in 1830. I had a cold wet swamp, containing about one acre of land, lying before my house, which yielded a heavy burthen of coarse swamp grass, intermixed with rushes, skunk-cabbage, and other noxious weeds. This crop was only fit for bedding for cattle. In the spring of the year, the swamp was a bed of mire: for many years I had one ditch through it, and frequently two or three, but they neither drained the swamp, nor

improved the grass. Previous to underdraining, I had frequently carted sand and gravel on to the swamp, which was dish form, lowest in the centre, but with very little effect.

The swamp being near my house, was quite offensive, and believed to be unhealthy: it therefore became important that it should be reclaimed. By sounding, I found that the mud was deepest in the centre; I then caused a main ditch two and a half feet wide, to be dug through the centre of the swamp, and deep enough to take the upper water-courses. Small ditches were then dug from the spring holes to the main ditch. The ditches were then all filled with stones cast in promiscuously, but deep enough to be out of the reach of the plough. The stones were then levelled, and well covered with coarse hay, dry sea-weed, &c., to prevent the earth finding its way among the stones thus deposited; the earth which had been taken out of the ditch was then cast back.

After this preparation, I proceeded with one-fourth of an acre as follows: I collected a quantity of small bushes and weeds, sea-weed and other rubbish, and commenced ploughing the swamp with two yoke of oxen. Having ploughed one furrow, I filled it with the brush, sea-weed, &c., and turned the next furrow upon it. I proceeded thus until the entire quarter of an acre had been ploughed and treated like the first furrow.

This may be, by some, thought to be small work, but I have made it a rule and advised others when they were to try experiments, to try small ones. If they succeeded, they could increase; if they failed, they would lose little.

The ground thus ploughed, was then cut and leveled with the bog hoe and harrow, and twelve cart-loads of compost manure spread on. It was then sowed down in September of that year, with six pounds of small clover, six quarts of herds-grass, and one bushel of bent seed. In the July following, 1831, I cut from this quarter of an acre, one ton of hay at a single cutting, which was sufficient, besides paying the cost of cutting and curing, to pay the entire expense of reclaiming and preparing the land on which it grew. It may be well to state that hay was that year worth thirty dollars per ton.

The remainder of the swamp could not well be ploughed and prepared at the same time. I however carted on sand and gravel to kill the foul grass that was not destroyed by the bog-hoe, the same fall and in June 1831. I put on compost manure at the rate of fifty loads to the acre, and proceeded as before with bog-hoe and harrow. I sowed oats with grass-seed. The oats grew very large, were mowed in their green state and taken off. The young grass grew so large the same year, that some of it was mowed. Since that time, it has been mowed every year, and the whole swamp has made an average yearly crop of three tons of hay per acre. For four years, nothing was done to the land. Since that time it has annually had a light dressing of manure. The clover run out after the first year, except over the ditches, where it still remains. The

herds-grass and bent, or burden, were the principal grasses; the herds grass growing to a monstrous size, producing some heads measuring thirteen inches in length. Every three years this acre of land pays the entire expense which has been laid out on it, beside the cost of culture, manure, &c.

In 1835, I partially reclaimed and cultivated a second swamp, to great advantage. In this swamp, the mud was found to be deepest under the banks, which is generally the case where the banks are high. Here the ditches are made on the margin of the swamp; but in all cases there must be fall enough to carry off the cold spring water. In digging ditches, they should be dug deep enough to take the first water-courses: these are generally found at the pan or sub-soil. To be certain and to make the labor effectual, it is well to dig from four to six inches into the pan, to give the spring water a passage; it will then rise and run off among the stones in the ditches.

I commenced three years ago on a third swamp, where I wished to reclaim four acres. This, or a part of it, was peat: the ditches were therefore required to be cut six feet deep: on a small part of the swamp the ditches were two rods apart. It is probable that twice that distance would have answered, but having plenty of stone at hand, and wishing to make thorough work, they were placed nearer together. On this part, which was about three-quarters of an acre, no animal could find a footing—hence all was done by manual labor, with spade, bog-hoe, &c. The stones were wheeled in on planks, and deposited and covered in the ditches, as in the former cases. In 1842, it was impossible for an ox to walk over this land, yet in the spring of 1843, it was ploughed and planted. Manure was carted on without the least inconvenience. On the last of May, three acres were planted with potatoes, and a fine crop was obtained. Among these were planted for experiment, corn, pumpkins, cucumbers, squashes, turnips, &c., all of which grew vigorously and ripened.

On the 21st and 22nd of June, 1844, two acres of this reclaimed land was sown with millet and grass-seed—twelve quarts of millet and one bushel of herds-grass with other grass seed to the acre. On the 1st of September the crop was harvested. The millet had grown to an enormous size, the top heads as it stood, measuring six feet in height; it was judged by the reapers, and by those who saw the field, that from eight to ten tons of fodder would be produced on the two acres. Thirty bushels of seed were obtained from the top heads. The remainder of the reclaimed land was planted principally with potatoes, more than half of which were rotten, though not more so than those raised on other land on my farm, and by my neighbors.

The expense of reclaiming and manuring will not be far from one hundred dollars per acre.

I have long been of the opinion that swamps are our most valuable lands. The outlay necessary for reclaiming them, prevents their

culture ; but my experience has proved to my satisfaction that where there is fall enough to drain a swamp, they will produce more clear profit than any other lands I have ever cultivated, even allowing the expense of underdraining, manure and cultivation to be \$100 per acre. Before underdraining, these lands are worth but a trifle. I have sold from one acre of reclaimed swamp, three tons of hay at \$20 per ton, from a single mowing.

I would remark, that casting the stones into the ditches promiscuously, is much the best, for it permits the water to enter without any obstruction, and to find its way through them, and it will keep itself in good order ; if I could have a stone box put in at the same expense, I should prefer to have the stones cast in promiscuously. After one of these ditches had been made twelve years, I opened it for the purpose of changing its course. The stones were perfectly clean and not in the least obstructed by mud.

It should be recollected that these are blind ditches, and that they should be closed at the fountain or head, and no natural stream should be permitted to run into them.

Respectfully, yours,
GIDEON SPENCER.

Warwick, Nov. 6, 1845.

From the Southern Cultivator.

IRRIGATION.

Mr. Camak :—The late extremely dry summer, causing, in many instances, a failure, and in others a very light crop, shows the necessity of improved modes in agriculture. No section of the southern country has so many natural advantages to improve land, and consequently increase the product by irrigation.

All that tract of country in South-Carolina and Georgia above the sandy country, such as is based on clay, would be advantaged by irrigation. Where the rivulets and streams run out of elevated situations, if, instead of permitting them to seek their natural level, by falling over precipices and shoals, these streams were conveyed in ditches on a level with the point at which they were taken out of their usual channel, the lands, below the ditch thus made, would be immensely improved and the production astonishingly increased by the moisture that would make its way through the porous earth. And all of what is called the up-country, where there is a considerable descent in the small streams is susceptible of such advantages.

It will appear to many, this is practicable ; but making the ditches they will view as too expensive, presuming they must be dug out with mattocks and shovels. Ditches may be made that will answer every purpose with a plough. They need not be deep if kept on a proper level, even through lands covered with trees.

When the level is marked, a coulter plough with two strong horses or oxen, if run three times on the line, having an axe ready

to cut roots out of the way of the coulter, and then followed with a turning plough, will open out the ditch very soon and with but little labor. The turning plough should be followed with a shovel to throw out loose earth that has not been thrown out by the plough. Three hands with the proper ploughs should open a ditch ready to receive the water, even where many roots would have to be cut, of a quarter of a mile in length per day.

The ditch is best not to be deep. The water running near the surface will have its outlets along roots and between the topsoil and clay bottom, moistening both, and thus increasing the attractive powers of the clay, so as to take (what kind nature is willing to bestow) in nitre to the grasping but invigorated soil, which in that state is gaping with open mouth for this natural aid. The soil, if wanted for grass, soon presents a green sward which resists the scorching rays of the sun; so soon as that is done then the deposit of nitrous matter is abundant and enriching.

To reap the earliest benefit from irrigation in producing, is to have the water running in the ditches during the winter. Frost aids very much in fertilizing, and in the absence of a hot sun, nothing extracted by heat, only the genial warmth of the earth in receiving the deposits extracted from the atmosphere and deposited by the water, which is kindly and providentially held in reserve by the kind earth to produce the next summer.

In ploughing lands that have thus been under the influence of irrigation, it is astonishing to see the amount of the rich deposit in many places under ground. It will look as if a large quantity of manure had been placed there, all of which had been deposited in almost imperceptible particles with the many bubbles floating in the stream. But when we think these mites in the course of one hour are innumerable, the accumulation of a winter or five or six months will make these millions of mites into large and valuable deposits, enriching the soil and presenting an increased and improved product.

This would appear as if it were designed only to produce grass. I will, at some time, show my experience in improving lands by irrigation, and the astonishing effect in producing corn, if I should have time to devote to writing. As I have filled my sheet I shall present nothing more at this time.

Irrigation will make parts of South-Carolina productive beyond the conception of the most extravagant. The water will thus be taken from where there is too much so as to do injury, and placed where it is wanted, increasing the product of both.

Yours, sincerely,
D. REINHARDT.

Greenville, S. C., Oct. 27. 1845.

A mixture of equal quantities of salt and ashes, applied around the stem of young cabbage and most other plants, is recommended to keep off worms.

From the Southern Cultivator.

PRACTICE OF AGRICULTURE.

Mr. Camak :—I promised you some account of my farm, though indeed it is hardly worth talking about; but, such as it is, it is the best I have got, and it becomes me to make the best of it I can. My farm embraces 360 acres of poor pine land, lying on both sides of the Barbour creek, four miles from the beautiful town of Eufaula. The creek about divides the farm. One side of the creek the land is extremely broken, the other side perfectly level.

It is often profitable to compare years in agriculture. This can only be done by keeping a farming memorandum or diary. I will therefore give you a short account of the operations of 1844 and 1845, taken from my farming book or diary, to wit:

On the 1st page for 1844.

Say 360 acres poor pine land at \$6 per acre,	-	\$2,160 00
13 hands, mostly boys and women, counted at 10 good hands,	- - - - -	5,800 00
Five mules,	- - - - -	375 00
One yoke of steers,	- - - - -	50 00
Carts, tools, &c.,	- - - - -	115 00
Capital invested,	- - - - -	\$8,500 00

I find the interest at 8 per cent.	- - -	\$680 00
Overseer's wages, including board,	- - -	300 00
Bagging and rope,	- - -	100 00
Various other expenses,	- - -	100 00—1,180 00

The following is the division of the farm for 1844, as to cultivation: say, in

Corn,	- - - acres	100	Potatoes, rice, &c., acres	5
Cotton,	- - -	100		
Oats,	- - -	50	Total acres,	255

The following is the production:

Corn and meat on the farm sufficient for the farm as well as for the family in town. 59 bales of cotton made, averaging about 500 pounds to the bale.

The gross sale of 47 bales sold in the city of New York,

- - - - -	\$2,119 62
Expenses on 47 bales to New-York,	- 271 74—\$1,837 86
12 bales of inferior cotton sold in Apalachicola,	\$232 80
Expense on 12 bales,	- - - 20 00—\$212 80

Total,	- - - - -	\$2,050 66
Deduct entire expenses for 1844,	- - -	500 00
Leaving a profit of	- - - - -	\$1,550 66

The foregoing calculation, taken from my farming memorandum, I think is about correct. A large portion of my cotton sold in New York, brought over ten cents per lb. It will be seen by the foregoing calculation, the interest made on my farm and the amount invested in it.

Operations for 1845.

The value of property set down on the first day of January, 1845, the same as the first day of January, 1844, viz: - \$8,500 00

The following alteration as to land cultivated, to wit: Number of acres in

Corn,	-	-	acres	120	Potatoes, rice, &c.,	acres	8
Cotton,	-	-	-	80			
Oats,	-	-	-	50	Total acres,	-	258

The corn crop has been considerably increased over 1844. There will be considerable falling off in the cotton crop. I see on page 30 of this year's farming memorandum, that we hauled out 275 cart-loads of compost manure, prepared with the blue marl of this region, and pine-straw, about equal parts, and the treading of cattle. But the severe drouth of July and August, so severe always on pine or sandy land, caused the cotton to cast its squares and young bolls, and instead of fifty bales, which was the crop I planted for, I will not make more than thirty-five. We will this year have no inferior cotton, as our cotton was all made early in the season and picked out early; indeed, we have picked out no cotton this year in October, our small crop having been picked out before the last of September, as we picked it out as it opened; and now taking the pains with it that we are, having so little to manage, we are making a fancy article, and expect to obtain 12 cents per pound for it; for it is generally known that where a farmer keeps entirely out of debt, and is not compelled to force his cotton on the market, and makes an extra fine article, he can generally put his own price on it, and nine times out of ten, he will get it. I priced, last year, all my extra fine cotton at 10 cents per lb., when most of the cotton was going at 5 cents, and 26 bales of it brought in July 10½ cents. The cotton of the present year is altogether superior to the cotton of last year, for the reason, that we have had it in our power to bestow much more labor and pains on its preparation, and we obtained a seed that produces a longer and finer staple. Hence, we now price it at 12 cents. There are other advantages growing out of a short crop. I find, at page 180 of this year's farming memorandum, that up to Saturday, the 8th of this month, we had been 38 days hauling marl into our lot—that to make our compost manure, the marl being within fifty steps of the lot, we hauled with two hands and a yoke of steers, thirty loads per day, averaging ten bushels to the load.

We set down the labor of two men and a cart and steers at \$2 per day, - - - - -	\$76 60
I find at the above page that we had been 24 days hauling pine-straw into the above lot where we prepare our compost. There being five hands engaged in collecting and hauling the straw, we set it down at \$3 per day, - - - - -	72 00
	<hr/> \$148 00

We propose continuing until the close of the year hauling in the blue marl and the straw in the lot where our cattle, to the number of forty, are penned every night. I would here remark that our manure lot is dug in the centre and raised all round, so that the urine of the cattle and all is saved.

Now, I have said something of the advantages of a short crop:

I find at page 162 of our diary, that up to Saturday, the 18th of October, we had finished sowing our oats; for in this climate we can sow oats with safety in the fall, as they will stand the winter.

I find on page 167, that up to Saturday, the 25th of October, we had rolled our logs on the stubble land, and had it turned over for a crop of corn for 1846. Thus, by turning the green grass completely under, it will rot and be much better prepared to make a crop the ensuing year. We hope to make two thousand cart-loads of compost manure. Should we succeed, we will be able to manure all our level land. As the making a compost manure out of the blue marl and pine-straw is rather an experiment, I will, if spared, give the result at a future time.

Your friend,

ALEXANDER M'DONALD.

Eufaula, Barbour Co., Ala., Nov. 15, 1845.

For the Southern Agriculturist.

USE OF OKRA.

Longwood, Williamsburg, Dist. Jan. 1846.

Mr. Editor:—I observed in the last number of your interesting Journal, a communication from J. F. Callan, commending "okra" as an "excellent substitute for coffee." My own observations and experiments, during the last two or three years, warrant me in confirming all that Mr. Callan says of this very valuable vegetable, not only as a substitute for coffee, but as a very palatable and most nutritious ingredient in the preparation of soup, and an esculent equally valuable, when boiled in its green and tender state, and dressed with drawn butter and a slight sprinkling of black pepper pulverized.

Okra used entire *alone* is a very good substitute for coffee; my custom, however, has been, to take equal portions of coffee and

okra—after being parched and ground—and when used in this manner, no one, however fastidious in taste, can distinguish it from the best “Java.”

Mr Callan states that in cultivating the okra, the seed should be sown “in drills four feet asunder, an inch deep, and *eight inches* apart.” This mode of culture is not the best. Okra, like cotton, sends out many arms or limbs from the main stalk, and requires—even more than cotton—a good deal of space to ensure the full development of the plant. The better plan I think—and the one which I pursue—is, to plant the seed in chops, or small hills, four feet apart each way; drop from four to six seed in a chop, and when the plants are about four leaves high, thin out to a single stalk. In good soil this *stand* will be sufficiently close, as the limbs or shoots begin to put out a few inches above the surface of the ground, and before the season is half spent, they will meet and interlock. The okra plant continues to grow, to blossom, and to bear fruit through the entire season, until checked by frost, and on ground only tolerably rich, the product is very great.

Considering the excellence of okra as an edible, and as a substitute for coffee, how easily it is grown, and its great productiveness, it is surprising that it is not more extensively cultivated and used. The fourth of an acre of good ground, will yield more seed than a large family can consume in a twelvemonth; and the poorest man in the land, if he has but a garden spot and a little industry, may indulge in his dish of coffee every morning and evening in the year.

Very respectfully,

A. W. D.

SOUTHERN INDEPENDENCE.

It gives us real pleasure to be able to copy such articles as that which follows. We find it in the Greenville (South-Carolina) paper. May we not hope that this is the beginning of a new state of things in the Southern States?—*Ed. So. Cult.*

“We presume it is not generally known that a Corn Broom Manufactory has been in successful operation at this place, (Greenville, South-Carolina,) during the past year—such, however, is the fact, and it is probably the only one south of the Potomac. The establishment is owned and under the direction of Dr. Crittendon, who manufactured five or six hundred splendid brooms last season—

equal to any made in the United States for strength and beauty of finish. He raises the corn, and turns the handles from timber obtained on his farm. We are informed that these brooms will be furnished, wholesale or retail, as cheap as a similar article can be delivered in any of the southern cities.

"Dr. C made preparations for extending the business next year, but the drought of the past Summer almost entirely cut off his crop of broom-corn; he has raised sufficient, however, to make about 1000 brooms. Success attend all similar enterprises, say we."

—
Nothing pleases us so much as to be able to record any evidence, however slight, of a determination on the part of the South to rescue herself from the miserable habit of depending on others for what we ought to make ourselves. Such evidence is furnished by a late number of the *Wetumpka Argus*, and we copy it with very great pleasure indeed.—*Ed. So. Cult.*

"*Alabama Castings.*—That load of fine castings, which was left at the store of Messrs. A. P. & J. C. Langdon, last Monday, was *Alabama manufacture*. It was from the furnace of Mr. John M. Moore, in Benton county. It is said by those who profess to be judges, to be a first rate article—superior to Eastern or Western castings for toughness and standing the fire. We believe it to be a superior article—cheap too, as it can be bought anywhere; and we trust that Alabamians will buy this ware in preference to that which is imported. We say, give the preference always to Home Manufactures—encourage those of our fellow-citizens who are engaged in those undertakings, come what may. It is our true policy—interest, as well as State pride, should influence us.

"Mr. Moore is now making *six thousand* pounds of castings a day, and can make more if the demand requires it. He has a large supply on hand, and is preparing boats to take large quantities to Mobile. He thinks he can sell as low, and lower—and give a better article too,—than the Northern and Western manufactures can; and if so, we really hope our Mobile dealers will give him the preference. We think he may claim a fair trial at their hands."

From the Southern Cultivator.

HIDES.

Mr. Camak :—Almost every farmer (frequently other persons too,) has more or less hides to dispose of every year. Hitherto, they have generally taken bad care of them—many persons neglecting them altogether. The principal reason of this, I presume, has been the want of a good market for them. Now every little saving to the farmer (the same is true of all of us,) is so much clear gain, especially if he can do it without neglecting other business, and with little or no inconvenience or expense. The demand for hides is on the increase, and consequently the price must be better. A market is almost at the door of every man. As an instance, take Putnam

county, where a few years ago, there was no tannery : now it has six. And I have good reason to believe that there is a great increase of tanneries in all parts of the State.

Almost every farmer has from three to ten hides annually, some from thirty to fifty. These hides are worth (if properly taken care of,) from 50 cents to \$6 a piece. Upon an average their price may be safely estimated at \$2 each; so that from this estimate you see that the farmer's hides are worth annually to him from \$6 to \$100. Notwithstanding this, you will scarcely find one tenth of the community who bestow proper attention on their hides. 'Tis true, some are alive to their interest on this subject—but how few !

The common mode is to flay the beef and throw the hide on a fence rail, under a shelter or hen roost, or on top of a negro cabin ; there it remains till the farmer wishes his annual supply of leather, or till he has leisure to send to the tannery. By this time it is generally tainted, worm-eaten, or destroyed by the rats ; it is then good for nothing—not worth tanning. Many persons have their hides tanned on shares, viz : give one half for tanning. When they bring such hides to be tanned, they expect to realize good leather from them ; but this is out of the question—they won't make good leather, and the tanners are blamed for not making good leather out of bad hides. 'Tis this injurious exposure that has prevented many yards from tanning on shares. If good hides are always brought to the yards, good leather may be expected in return. Thus you see, by neglect, from \$6 to \$100 is annually lost to the farmer, in part or in whole. This is perhaps more than double his annual tax. Perhaps not less than 2 or \$300,000 is lost to the State every year, in this one article alone. Is it not high time for us to economize ? How much better would it be to appropriate this amount to educational purposes annually ? We buy largely Northern shoes and leather, taking the proceeds of cotton to pay for them. And that I may do good on a larger scale, let me speak a little more particularly to the wealthy farmer : You employ an overseer to attend to your business, and he perhaps cares nothing for your hides. Now, when you employ an overseer, let this be part of his business. Perhaps that one item may cover one-fourth or one-half his wages. I am acquainted with men who are called neat farmers, and they make money too, and seem to have everything conducted in systematic style, yet they hardly ever realize anything from their hides.

If the farmer has no better rule for preserving his hides, let him take mine : In the first place, always send your hides to the yard, while green, then you run no risk, and green hides generally make the best leather. You will realize more from the green hides than when dry—5 cents per pound for green hides is about equivalent to 12½ cents for dry ; but the tanners pay only 10 cents for the dry—that is, double the green price. But if not convenient to send to the yard when the hide is first taken off, sprinkle a little salt on the flesh side and fold it up, this side in, for two or three hours, for the salt to strike in, then hang it up *smooth*—that is, free from wrinkles—

in some barn or out-house, keeping it out of the sun and rain all the time. When cured, sun them occasionally and beat the worms out, if there be any. You may then have no fear of your hides.

You must recollect another thing also: if you have timber to cut down, do it in the spring and sell the bark to the tanners, and your sap timber will then last nearly as long as the heart. Your sap timber is generally ruined by bark being left on it, and also by cutting down at improper seasons of the year.

Very respectfully,
J. H. ANDERSON.

Salem, Ga., Oct. 20, 1845.

From the Southern Cultivator.

DEEP PLOUGHING.

Mr. Camak :—I had a field of thirteen acres, naturally very poor, (so much so, that the first natural production was a poor growth of sheep sorrel, a certain indication of sterility,) which I intended to put in wheat. The summer was something like the last, excessively dry. When the time arrived that this field should be broken up, it was so hard a plough with two horses could not be got into the ground. Four horses were tried without success. A coulter was tried with two horses but the draft was too great, and four horses enabled the ploughman to break up this field.

The weather continued dry, and when it was time to sow the wheat, a piece of corn was gathered and that sown, (no rain meanwhile;) the ploughs were then removed to the field ploughed with the coulter, and it was discovered it ploughed well. The wheat was sown; no manure was applied. The wheat when harvested was a very tolerable crop, (for such poor land, very good,) and there were many places from 10 to 20 yards square covered with luxuriant clover. No seed could have been on the land, and how it came to grow can only be solved by future experiments.

The idea that struck me (which I would like to see investigated by some more scientific experimentalist,) is, that the plough having reached deep into the clay bottom, (the top soil was decomposed granite, or coarse gravel,) the clay attracted nitre from the atmosphere, and thus caused the growth of clover, which it is believed will only grow on lands cultivated for some time and manured. New lands will not produce clover if very rich.

Another suggestion I will make, with the hope it may be subjected to scientific and chemical research, which this experiment suggested to me:

By deep ploughing at the season when the sun's power is diminished from summer heat, the earth then becomes warmer than the atmosphere, and as there is attraction in heat, may we not suppose the nitrous particles floating in the atmosphere will be attracted by the greater warmth of the earth, and so powerfully aid in fertilizing the soil.

With much respect,

R.

LOUISIANA SUGAR.

We copy the following interesting article on the production of sugar in Louisiana, from the *Commercial Review of the South and South-West*, edited by J. D. B. De Bow formerly of this city. He is a young man of morals, talent and industry; and has shown superior energy, certainly, in the promptitude with which he has established himself, and founded a new literary enterprise, in our sister city of New-Orleans. The contents of this initial number of the "Commercial Review," show equal ability and application. The copy which has been sent us, can be seen by those disposed to call, and we shall be happy in receiving the names of any who may desire to subscribe for the work.—*Ed. So. Ag.*

The cane is now cultivated and worked into sugar in nineteen parishes, to wit: Pointe Coupée, West Baton Rouge, East Baton Rouge, Iberville, Ascension, St. James, St. John the Baptist, St. Charles, Jefferson, St. Bernard, Plaquemines, Assumption, Lafourche Interior, Terrebonne, St. Mary, St. Martin, Lafayette, Vermillion, and St. Landry, and large preparations are making for its introduction and manufacture in the following heretofore exclusively cotton parishes, to wit: Rapides, Avoyelles, Concordia, Catahoula, and Calcasieu.

The extent of sugar lands embraced in the above parishes, and which could be put into cultivation at the ordinary expense of clearing and draining, would be sufficient to supply the whole consumption of the United States; and by applying to our low, flat lands, for a few years, the artificial draining of Holland, (and more particularly to the tract on our western coast, between the sea and the Mississippi,) lands enough could be reclaimed to supply, besides, the consumption of a large portion of Europe.

By state documents, in the archives of the French government, it appears that the culture of the cane was strongly recommended in the earliest days of the colony.

This valuable plant was first introduced from St. Domingo, by the Jesuits; and it was cultivated on their plantation, where now stands the most flourishing part of suburb St. Mary, as early as 1725-6.

The species first imported was the Malabar, otherwise called Cristalline, or Creole cane. The next species was the Otaheite, sometime about the close of the last century. The third species was the Ribbon cane, in 1817; it was first introduced from Georgia, by a Mr. Coiron. It comes, originally, from the East Indies, and presents a good many varieties; it is now the favorite plant, owing to its earlier maturity, and its resisting better an early winter—two very important qualities in this climate.

The manufacture of cane into sugar, does not appear to have commenced before 1764, when samples were sent to the mother country from the estate of Chevalier de Mazan, near the city, on the opposite

bank. The yield per acre was then stated to have been 3,000 lbs., and the quality was pronounced to be equal to that of St. Domingo muscovado.

The cession of Louisiana to Spain, at that epoch, appears to have put a stop to that industry, for no further traces of sugar-making are to be found until 1791, when the first sugar-house, under the Spanish government, was erected by a Mr. Solis, at Terre-au-Bœufs, in the parish of St. Bernard. The next was established in 1796, on a plantation situated where now stands Carrollton, and belonging to a Mr. Boré; it produced a crop of \$12,000, a sum considered at that epoch, as very large. This result may be said to have laid the foundation of the sugar industry in Louisiana. Its progress, however, was at first extremely slow; and at the epoch of the cession of Louisiana to the United States, the number of sugar estates was very small, no doubt owing to the want of capital.

The statistics from 1803 to 1817, are so deficient, that it is extremely difficult to arrive at any correct data as to the progressive annual increase of the sugar crop during the above period.

The crop in 1818, had attained 25,000 hogsheads. Cattle was the only power used, up to that period.

In 1822, steam power was introduced: the first engines and mills cost about \$12,000, and were chiefly imported by Gordon & Forstall. This power, however, was used but by very few, until our own foundries placed it within the reach of all, by reducing its cost to \$5,000 or \$6,000.

The crop of 1822-3, amounted to	-	-	30,000 hogsheads.
" " 1831-2, "	-	-	75,000 "
" " 1840-1, "	-	-	120,000 "
" " 1841-2, "	-	-	125,000 "
" " 1842-3, "	-	-	140,316 "
" " 1843-4, "	-	-	100,346 "
" " 1844-5, "	-	-	204,913 "

Each hogshead averaging 1000 lbs. net, and yields 45 to 50 gallons molasses.

Number of sugar estates in operation in 1827-8, 308, worked as follows:

Manual power, about	-	-	21,000 slaves,
Steam,	-	-	82 engines,
Horse,	-	-	226
Capital invested, then estimated at about	-	-	\$34,000,000

Number of sugar estates in operation or preparing to work in 1830, 691:—

Manual power, about	-	-	36,000 slaves,
Steam,	-	-	282 engines,
Horse,	-	-	409
Capital then invested, estimated at about	-	-	\$50,000,000

Number of sugar estates in operation in 1841-2, 668 :—

Manual power, as ascertained by the last Federal census,	- - - - -	50,670 slaves,
Steam,	- - - - -	361 engines,
Horse,	- - - - -	307

Number of sugar estates in operation in 1843-4, 762 :

Manual power, at lesat,	- - - - -	50,670 slaves,
Steam,	- - - - -	408 engines,
Horse,	- - - - -	354
Capital invested, estimated at about,	-	\$60,000,000

It has been ascertained by Mr. Champomier, in a late excursion throughout the State, that not less than 410 cotton estates are now in full preparation to go into the sugar business.

The tariff of 1842 has truly created a new era for the sugar industry. No doubt it will now be seen in the ascendant until we shall have reached the full amount required for the consumption of the United States, which, at present, is not under 350,000,000 lbs. Until 1831, it was the general belief that Louisiana sugars were too weak for refining. Questioned upon this subject on the floor of Congress, the late Messrs. Edward Livingston and Josiah Johnson, were compelled to confess that it was so. This supplied Messrs. Lea and other politicians of the East, with a most powerful argument to demand a reduction of the duty on sugars imported for refining, to wit: that no protection ought to be asked by Louisiana against an article it could not produce. This would have been a fatal blow to this State. At that epoch, however, Gordon and Forstall had just introduced into the State the *vacuo* process of Howard, and the argument of Mr. Lea and supporters was met by shipments of several hundred tons of sugar, refined from pure Louisiana, which obtained the medal in New-York. This, for the time being, put an effectual end to the crusade preparing against Louisiana.

Five or six years ago, two of our planters adopted the same process, and they have been eminently successful: not less than six estates are now upon the white system plan; and such are the improvements now going on, and the skill brought into action, that it requires no prophet to predict, that but few years can now elapse before Louisiana shall have it in her power to supply the whole Union with white sugars directly from the cane. OPELOUSAS.

CULTIVATION OF COTTON IN THE BAHAMAS.

Cotton-seed, unlike sugar-cane, coffee, and many other tropical productions, yields a rich harvest the first year of planting. There are two modes of cultivating the cotton-plant in hot countries, where it is perennial, viz: 1st, annually, by planting the seed with the May or spring rains; 2dly, by allowing the plants of the first year

to remain, and treating them as orchard trees. The treatment for the first year is the same in either case, viz: topping the cotton when a foot high, and, when the flowering of the cotton is over, the ends of the branches should be nipped off. The second year prune in February, leaving four prongs on the stem. In succeeding years follow the plan proposed for the second year, keeping the tree at a convenient height for picking. In the Bahamas the cotton seed may be planted in rows six feet by four, giving 2,151 cotton plants to the acre, rooting out every other tree after bearing, thus leaving the permanent cotton orchard, six feet by eight, with 1,075 plants. By top-dressing with ashes or sand (or other compost manure) a peck to each tree, the plants so treated would retain their pristine vigour for many years, and the whole waste lands of the colony, not fit for pine-apple cultivation, and not otherwise wanted, might be converted into cotton plantations. Cotton luxuriates in situations sheltered, particularly from the N. wind; and the valley between the Balliou Hills and Nassau, would, in this respect, be well adapted for the plant, as some experiments have shown, particularly if the cavity in which the seed is deposited were filled up with adjacent dirt. There are, however, equally sheltered situations, with more soil, on New Providence, uncultivated and consequently unproductive to their owner, while on the out Islands of St. Salvador, Long Island, Walting's Island, Grand Bahama, Biminis, and others, there are thousands of acres of uncultivated land well adapted to cotton culture. The chenille insect is said to attack cotton of the first year's growth only, and the red bug is said to prefer the tomato plant to the cotton shrub if planted in the vicinity. The Anguila cotton has been preferred in consequence of its flowering in the winter, and being consequently less liable to be attacked by bugs. But, on the other hand, the autumnal rains and heavy dews in the winter, frequently chill the cotton bud and prevent its fully attaining maturity, whereas the Georgia or Sea-Island cotton plant blossoms in the summer, and, on the whole, is preferable, particularly if care is taken to *plant plenty of tomato plants in the vicinity* as food preferred by the cotton bug, should that insect make his appearance. It is calculated, that even at the present low prices of cotton, healthy trees would net the cultivator \$75 to the acre, and if the staple could be produced equal to the Sea-Island cotton, this might be multiplied by four or five, there being that difference fully in price, and there is little doubt but the finer and more valuable descriptions of cotton might be raised in the Bahamas, the prices realized having frequently been equal to the prices commanded by Egyptian cotton. One of the discouragements to the cultivation of cotton in New Providence and many other out Islands, by small proprietors, is the absence of a gin for separating the cotton from the seed; but if cotton was generally planted, one public gin might be erected, which would yield a profitable return. Companies are about being formed in England for cultivating the sugar-cane in the West-Indies. Similar efficacious means applied to cotton culture here might once

more insure the growth of a most important staple in the Bahamas, where the climate and rocky land, with fissures and crevices filled with rich vegetable earth are peculiarly adapted to the cotton plant. In the East-Indies, and many other fertile soils, the cotton plant grows too rank, and this over luxuriance produces wood instead of cotton. Of all the tropical climates in Her Majesty's dominions, there is none, perhaps, more happily situated than the Bahamas for the cultivation of cotton, but there is wanted to insure its success capital to expend and judgment to direct the culture. It may be added, that at New Providence, African agricultural laborers abound willing to be employed as laborers; males at the low rate of a quarter of a dollar per day, and women at half that amount, and that Crown land may be purchased at 6s. sterling per acre, and private land at moderate rates; the application of British capital to which is wanted to supersede the native "bush" by the graceful cotton plant, with its golden blossoms and silver fleece.

[Nassau Gardener.

☞ The planters of cotton, will notice the above, and improve by the hints given.

THE COTTON PLANT.

Perhaps no physical event illustrates more remarkably and clearly the superintendence of Providence than the *cotton plant*. At this moment it has an important influence in preserving peace between the two greatest maritime powers, and perhaps between the whole civilized world. The interests of all classes in Great Britain are directly or indirectly dependent on the uninterrupted supply of cotton from the United States. A very large portion of the most influential of the Southern States would be reduced to bankruptcy by the suspension, for a few years, of the demand for cotton from Great Britain. The value of property throughout the cotton growing States would be greatly depreciated by a rupture between this and the mother country. The statesmen of Great Britain and these States foresee these and other consequent evils, and hence much of that unwillingness in the Southern States to provoke a useless and bloody war. Should a rupture take place, it would stimulate the growth of cotton in the East Indies and in South America, resulting probably in a permanent injury to our Southern Section.

When we consider the apparently accidental circumstance that led to the culture of cotton in this country, and the immense and varied interests that have grown out of it—interests that affect the moral, religious, social, political and physical condition of the whole world—we see a chain of events that can owe its existence to no other than the Creator himself.

The Sea-Island cotton is the most valuable of all the species. It is much longer in the fibre than any other description; it is also strong, even, and of a silky texture, having a yellowish tinge. It is of the annual herbaceous kind, and the seed is black; whereas most

of the other American cotton is produced from green seed. This cotton is grown on the sandy coasts and low islands which border the shores of South-Carolina and Georgia, where the plantations are exposed to the spray of the ocean.

Messrs. Homans & Ellis, 295 Broadway, have published in their Shilling Library, one number devoted to Cotton from the Pod to the Factory, giving its natural and domestic history, to which we refer our readers for practical information, and for subjects of profitable meditation.

[N. Y. *Far. & Mec.* Jan. 16.]

A PROFITABLE CROP OF COTTON.

We have been informed recently that our fellow citizen Dr. George Galphin, has gathered fifteen bales of long staple cotton from twenty acres of land, the quality of which is said to be very superior. A sample ginned as it was taken from the field without any moting, or other preparation, has been exhibited in the Savannah market and valued at *thirty cents* per pound. This is within a few miles of Tallahassee, and we understand that there are several other crops in this county which will probably yield quite as much to the acre. Those who have experimented for several years past in the cultivation of this cotton in our country, inform us that the crop is limited only by the capacity of the force to gather it and prepare it for market. The best informed on the subject incline to the opinion that to handle it carefully and bestow the proper amount of labor upon it in the way of moting, culling, &c., from one thousand to twelve hundred pounds of clean cotton to the hand, according to the nature of the season for picking, is as much as can generally be done, and keep the plantation in order. We predict that the day is not far distant when Florida will very nearly monopolize this branch of the cotton trade. [*Southern (Tallahassee) Journal.*]

The largest crop yet.—A few days since, we copied a paragraph from the Tallahassee Journal, which stated that Dr. George Galphin, of Florida, had produced *fifteen* bales of long-staple cotton from *twenty* acres of land, valued by sample in the Savannah market, at thirty cents per pound.

We have now the pleasure of stating that Dr. James Barnard, of Camden county, during the past season, gathered *fifty-eight bales* from *fifty* acres. It was the produce of the labor of *sixteen hands*, and Dr. B. has already been offered 25 cents per pound for the entire crop! Perhaps it might be well for the people of Georgia to test more fully the productiveness of their own lands before running wild after those of either Florida or Texas. Good lands are highly important, but not more so in their place than are industry, enterprise, and a proper system of culture. [*Sav. Rep.*]

A STATE AGRICULTURAL SOCIETY IN FLORIDA.

There is probably no State in the Union so much in need of a well organized Agricultural Society, as the State of Florida; and as we intend to devote a liberal share of our columns to the diffusion of information on the subject of agriculture, we shall, from time to time, urge this matter upon the attention of Agriculturists. We have inexhaustible beds of marl and other valuable substances, in almost every neighborhood in the State; these should be made to contribute to our agricultural wealth. We have a climate which invites us to cultivate, not only the necessities of life, but almost every luxury which we could reasonably desire; and yet there are but few who have attempted experiments calculated to increase our list of productions. A State Agricultural Society, would concentrate the experience of our most successful planters, and place it within the reach of all; and we have no doubt, would lead to the introduction of many new and valuable staples. It is due to ourselves, and to our new State, that we should develop our resources. We have extensive wood-lands and we want population for them; this we shall have when we are just to ourselves, when we show, (what we honestly believe to be the truth,) that we have the finest agricultural country in the United States. When we say this, we do not mean that we can raise more short-staple cotton to the acre or to the hand, than can be raised elsewhere, (and of this we can raise more generally, than we can gather and prepare for market,) but we mean to say, that we can raise a greater *variety* of staples. Within a few years past, the cultivation of the Cuba tobacco, has produced wonderful results for our friends in Gadsden county; it has not only furnished profitable results, but it has drawn to that county an industrious and valuable population. This is a production peculiarly adapted to small farmers; children are almost as good hands as grown men: and we have just heard of the result of a crop, made by a man without help, except by two or three of his own small children, which has yielded him one thousand dollars! This was for his crop of 1845, and the first that he has made in the country. The culture of the long-staple cotton, is now attracting some attention in this section of Florida, and we learn that thirty cents have been offered in Charleston and Savannah, for several parcels of last year's crop. The impression is rapidly gaining ground, that we can raise a very choice description of long staple cotton. The yield of this cotton, we understand, varies, according to the soil, from seven hundred to one thousand pounds of seed cotton to the acre, though, we understand that in a few instances, twelve hundred pounds have been gathered from the last crop. This crop we regard as no longer an experiment. We might speak of the equally satisfactory results which have attended the cultivation of the sugar-cane in our immediate neighborhood, and of the probability of the Manilla hemp's superceding all other staple crops in Florida, but must postpone to a season of more leisure, when we shall resume this subject.

[*Southern (Tallahassee) Journal.*]

TOBACCO PLANTING IN VIRGINIA.

Mr. W. W. Gilmer of Albermarle, is so notorious for his uniform success in raising tobacco plants, that we were requested to obtain and publish this method of managing his beds; to an application to that effect, we have obtained the following answer:—*Ed. So. Plant.*

“*My Dear Sir*:—My plan for raising tobacco plants is the result of careful observation and inquiry for twenty years. All planters of common intelligence, are able to pick the best location on their estates for plants; most of them are aware that some moist and some dry land should be prepared. I burn half in situations where water may be carried round in ditches, the balance on high ground. Early and hard burning all know to be best; yet many persons put off the evil day and *scorch*. The land should be made red hot if possible, for at least two inches. We frequently chop with a grubbing hoe before burning, regulating the depth according to the soil; prepare the beds as soon as burned; sow half the seed the middle of February, balance middle of March, on each bed—never put more than two-thirds of a spoonful of seed to the one hundred square yards; many beds have more good-for-nothing plants left, after their owner has failed to pitch, than would have planted double his crop. By sowing at the periods mentioned, we avoid usually the danger of having the young plants thrown out by frost, and get as good roots as when sown in December or January.

“After the March sowing, cover the beds from one-eighth to one-fourth inch thick with chaff which has been used for bedding in stalls for several months; put in at first six or eight inches, and keep the horses well littered with it; about February take it out, and put it in a pen well sheltered; first of March take it to some clean floor and beat it fine with a flail, then sow fifteenth March from hampers. The stalls should be plastered at least once a week freely, (farm pens also.) Cover the beds with brush as usual.

“I had this year a fine bed in an old field which had grown up, and never had more or better plants.

“The horses littered with chaff, should be fed on corn and fodder, or some food clear of grass seed. The chaff manure, is Dr. Gantt’s idea, and I think it a long way ahead of guano and every thing else.

“We never move the wood—burn out the bed at a single fire, put down large pieces to keep the wood from the ground, &c.

W. W. GILMER.”

CARROTS.

Mr. C. F. Crosman, of Brighton, has raised the past season 410 bushels of carrots on one-fourth of an acre. This is at the rate of 1640 bushels per acre. Mr. C. has also grown something like 1000 bushels of beets on one acre of land. He is extensively engaged in the seed growing business, producing several thousand dollars worth, annually.

[*Genesee Farmer.*

INDIAN CORN FOR FODDER.

Mr. B. planted an acre of corn for fodder, 18 inches apart one way, 12 the other, three kernels to the hill. He got five tons of well cured edible stalks, and fifty-four bushels of ears from the acre; the land was never manured; it was a clay loam interspersed with granitic boulders and quartz and limestone pebbles.

5 tons stalks worth this year \$7 per ton,	- - - -	\$35.00
54 bushels ears of 8 rowed corn, at 25 cts.,	- - - -	13.50

\$48.50

Deduct cost 1 bushel seed, planting, hoeing, cutting up,	}	17.44
husking, stacking stalks and use of land,		

Nett profit,	- - - - -	\$31.06
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S. W.

Waterloo, Seneca county, N. Y., Dec. 1845.

PRINCIPLES OF PLOUGHING.

Mr. Edmonston, editor of the "British American Cultivator," in his report on the State Fair at Utica, says in reference to the ploughing match: "Some of the work was tolerably well executed, but on the whole it would not have met the approbation of a British ploughman. The furrow slices were six inches deep, and from twelve to fifteen wide; and in the main turned perfectly flat. The ploughs were short in the handles; and in their general construction did not appear well calculated to turn a well proportioned furrow. The ploughmen have rather an imperfect idea of the best mode of forming ridges, and in taking up the two last furrows; they were so deficient in the latter particular, that among the twenty competitors, there was not a single individual who attempted to finish his work." He further remarks, that he "offered to plough a native-born Canadian youth of only 16 years of age, against any native-born American that could be produced." "We made this challenge" he continues, "not from any desire of competing for a wager, but merely to convince our American friends that their whole system of ploughing, at least so far as scientific principles are concerned, is radically deficient."

We have no doubt that the competitors at the Utica ploughing match, as well as the American farmers generally, would be glad to adopt any improvements which could be suggested on their present modes of ploughing; we have therefore copied Mr. Edmonston's remarks for the purpose of showing his views, and would now respectfully call on him to inform us what kind of ploughing would "meet the approbation of a British ploughman:" what he considers a "well proportioned furrow," what are the "scientific principles," by the application of which, our "*whole system* of ploughing" is proved to be "radically defective."

[*Albany Cultivator.*

LIME WITH MANURE FOR CORN.

Mr. Editor:—According to your request, I will make an *attempt* to answer the inquires of a subscriber in your last No., viz: "Whether lime would be of advantage (along with manure) to a yellow clay soil, intended for corn; and if so, what is the best mode of applying it? The land was ploughed in the fall."

There being so few circumstances given, relative to the soil, the kind of manure, locality, situation, &c., that I feel that I shall be groping, somewhat, in the dark, in attempting to give instructions in reference to this particular inquiry. My remarks, therefore, will be rather general in their character, and your subscriber must, for himself, make the particular application to suit his soil and other circumstances.

I give it, therefore, as my opinion, founded upon both theory and observation, that lime *will be* of advantage to a yellow clay soil, along with manure, if *both* are properly applied. But whether the lime will benefit the crop of corn the first season, is somewhat doubtful; as the action of lime does not fully take place until a year after it has been applied.

There are three great fundamental principles of the chemical action of lime in soils, as follows:

1st. Lime acts in a soil as a *neutralizer*: it combines with any acids that may be in the soil, and prevents their deleterious action upon the soil.

2d. It acts as a *decomposer*: it decomposes earthy and metallic compounds, and forms other combinations, which are readily soluble.

3d. The great use of lime in soil, is as a *converter*: it converts even solid vegetable fibre into soluble food for plants.

These are the great principles of the chemical action of lime in soils, and to these must be added its use as an indispensable constituent of all cultivated plants.

Lime also has a mechanical effect upon soils—and especially on clay soils, rendering them more open and pervious to air and water.

Lime has been used in agriculture many hundred years, and on every variety of soil, and always with beneficial effects, when judiciously applied. In England, recently, large tracts of country, which had been rented with difficulty at 5 shillings per acre, have been rendered worth 30 or 40 shillings per acre, by the application of lime alone. And innumerable instances might be cited in the United States, of its beneficial effects.

We come now to the proper application of the lime and manure. This will depend upon the *kind* of manure—but I suppose the kind meant is stable manure, in a state of partial decomposition; and my remarks will be based upon this supposition. It is stated that the land was ploughed in the fall, and of course it must be ploughed again before planting. The manure must be spread before it is ploughed and turned under. *After* this is done, the lime may be

slaked, and evenly spread over the ground, and well mixed with the surface soil by the harrow. Then furrow and plant the corn.

The reason why the lime should not be spread *with* the manure before the last ploughing, is thus given by Professor Johnston: "Quick lime *expels ammonia* from decomposed and fermenting manure" And another reason is, that the lime should be kept near the surface of the soil, within the influence of heat and air—but if spread *with* the manure and ploughed under, it would be laid so deep in the soil, that it would require a longer time to produce its full effects.

The *quantity* of lime required per acre, will depend, in a great degree, upon the quantity of manure applied and the amount of organic matter previously contained in the soil. There is danger of putting on too much—as Dr. Dana says, "lime changes vegetable fibre into soluble geine, but being applied in excess, it forms an insoluble salt"—"and though it converts, it at the same time *locks up* that geine which it had converted." Lime should, therefore, be applied in small quantities, and often, and the quantity should always be proportioned to the amount of manure applied, together with the organic matter already in the soil. The greater the amount of organic matter the soil contains, the more lime may be applied with safety, and *vice versa*.

It is possible that the lime may benefit the first crop; but its full effects will be apparent on the next and succeeding crops.

Respectfully, your friend,

LAPHAM.

[*Ohio Cultivator*.]

OPERATION OF GYPSUM.

Liebig supposes the action of gypsum to result from its attraction of ammonia from the atmosphere—the ammonia supplying plants to which the gypsum had been applied, with nitrogen. It is difficult, however, to account for all the results of gypsum on this theory. For instance, its effects have been seen on clover and potatoes, on the same fields where its application to wheat and other grains, (the very plants requiring most nitrogen,) produced no visible results. We have seen it applied on an argillaceous soil at the foot of a granitic hill with great benefits, when the same kind of gypsum applied at the same time to the same kind of crops, on the sides of the hill, produced no effect.

But whatever may be the principle on which plaster operates, its effects in many cases are wonderful. When in Connecticut last summer, we saw, on the farm of John Boyd, Esq., of Winchester, a striking instance of the effects of plaster on potatoes. Four rows of potatoes, to which a spoonful of plaster had been applied, were at least one-third more forward in their size and height of the tops,

and were also a much darker green, than others in the same field. The plastered rows were in the middle of the field, and excepting the plaster, had been treated exactly like the others. What the difference might have been in the *yield* of the plastered and unplastered rows, we have no means of knowing.

Mr. Chauncey Chapin, of Springfield, Mass., also showed us last summer, a part of his farm which has been mowed annually for fifty years, yielding on an average three tons per acre, (cut twice in a season,) and had received no other dressing during that time than two bushels of plaster per acre each year—one bushel being sown in the spring and the other in August. The soil seemed to be quite a stiff clay—too stiff for cultivation. It is a stratum which crops out in many places on the bank or terrace which divides the alluvion of the Connecticut river from the sandy plain east of Springfield. The effect of plaster on some other parts of Mr. Chapin's farm, is favorable, but nowhere so remarkable as on the soil mentioned. This case, and many others which might be cited, indicates that the effect of plaster is much effected by the nature of the soil on which it is applied. Perhaps there is no better way for the farmer to ascertain whether plaster can be profitably used, than to first try it in different ways, but in such an exact manner that its effect may be easily known. An experiment which would involve no risk or expense, to any extent, might settle points of great consequence.

[*Albany Cultivator.*]

USE AND ABUSE OF LIME AND PLASTER.

The prejudice against the use of lime and plaster has been overcome with difficulty, notwithstanding the striking effects of their early application. The objection to those mineral manures, that they would stimulate the soil to a fruitfulness which would soon exhaust it, is not altogether unfounded, provided care is not taken to keep up a supply of other minerals, which are indispensable elements in vegetable kingdom.

Lime and plaster do not enter into the composition of plants, but they have an agency in involving other mineral elements, as well as securing to the soil the aerial constituents, carbonic acid and ammonia. Quick lime, however, we should remark, expels ammonia, and should not, therefore, be mixed with barn manure, either in the heap or in the soil. Wheat crops have been frequently injured in consequence of the dissipation of ammonia by the mixture of quick lime with manure.

Plaster has the opposite effect. Most of the plaster used on our farms would be first well employed as an agent in fixing the fertilizing gases in the manure.

I have known rich loams—soils containing an abundance of soluble vegetable matter—much injured by the application of fresh lime. But the fertility of fresh lands, or soils which from any cause contain

a large amount of partially decomposed vegetable and animal matter, would be increased and preserved by the use of plaster. It facilitates decomposition, and at the same time fixes the ammonia in the soil.

To escape any injury from the use of lime as a manure, and to insure its best effects, the safest general rule is to spread it on grass lands and leave it a considerable length of time exposed to the atmosphere.

The heavy crops which follow the application of those manures, have exhausted the soil to a very great extent, of other indispensable inorganic constituents. As an evidence of this fact, we have seen clover which had been sown on oats, after corn which had been ashed in the hill, flourishing on the hills, from the effects of the ashes, whilst between the hills, the land was entirely bare. The combustion of vegetables dissipates all their organic constituents; but ashes contain all the inorganic elements which have entered into their growth; hence the striking effect of its application to some soils, proves conclusively that those soils are very deficient in some of those elements.

Clover meliorates and supplies the soil with a large amount of vegetable matter, hence it is a cheap and an efficient fertilizer, when there is a good inorganic basis; but when there is a deficiency of potash, lime, sulphuric and phosphoric acid, it must, in the long run, if removed from the soil, have an impoverishing tendency.

[Dungan's Agricultural Address, Buck's Co., Penn.]

From the Columbia South-Carolinian.

WORK FOR FEBRUARY.

Of all the aids which the farmer should study, we know of none which facilitates all his operations more, than the one of knowing, *when, and how, to do a thing*. The slipshod farmer, who leaves off repairing his fences and mending up his gates, until summer with its push of work comes on, always finds double labor and three fold vexation when the crop needs most attention. The present is the season for doing all such work, and in addition to paying strict attention to farm buildings, every one who wishes to get on handily through the summer, should thoroughly examine his farming tools, carts, wagons and gearing, and have the necessary repairs promptly made. All the stock of farming implements should be carefully overhauled, and deficiencies supplied with the best implement which can be procured. Whilst upon the subject of implements we beg to intrude a few words on ploughing, advocating a more thorough and deeper system of tillage, than is practiced even by our best planters. We all have learned a lesson which will be inculcated by a years agricultural suffering, but which we hope will ever remind

us that a depth of tilth is essential to the preservation of moisture and the production of fruitful crops. All clay soils, which have not been broken up, should be subjected to the pulverizing influence of the frost as speedily as possible. But in breaking up these lands, care should be exercised in not ploughing them too wet, for if the soil is too *sloppy*, all the labor bestowed upon it will prove profitless to the purposes of cultivation. If advantage be taken when the soil is exactly right—neither wet nor dry—but moderately moist—the effect of the action of the winter's alternation of *freezing* and *thawing* is calculated to disintegrate the particles of clay—render it friable, and thereby lessen the labor of cultivation; and by exciting decomposition of vegetable matter, facilitate the formation of the *silicate of potash*, and greatly increase the quantity and quality of all crops, which may be grown on it. The ploughs used in the South, especially on the stiff clay soils, are miserably defective, and we cannot imagine anything like perfection in ploughing until we furnish our sturdy laborers with proper implements. Those made by Ruggles, Nourse & Co., Boston, denominated Eagle ploughs, are the best turning ploughs we have ever used; but the Centre Draft plough, and the others which we have seen, would not fail to repay handsomely the cost of their introduction amongst our planters.

All planters who desire to keep up their reputation as neat and prudent managers, should ere this, have cleaned up their fence-rows and removed all the rubbish which had accumulated in and about their ditches. It is necessary that but little water should stand on land intended for cultivation, during the winter, as it renders it extremely difficult to put it in cultivation in the spring.

If the weather is fine and open, *rye* may now be sown, the putting in of which crop should at all events not be delayed longer than the 10th of February. *Oats* should be sown in February, and as it is reasonable to suppose from the severity of the winter, that all those insects which have ravaged this crop for the few past seasons, will be entirely eradicated, we would advise the sowing of large quantities of this grain. Oat seed procured from a northern latitude is always the best, and will yield heavier crops than that grown amongst us.

Irish potatoes and *Jerusalem artichokes* should be planted this month. The former root has become so uncertain by reason of the prevailing rot, that under ordinary circumstances we would not recommend a large crop to be planted. But with all the trials ahead, we think if good seed can be procured at a reasonable rate, a large crop should be planted this season; for we should strive to furnish all kinds of food to our stock, which will come in at an early day, in order to relieve their wants.

The best mode of cultivating the Irish potato, is to plant them in the ordinary way, in low flat beds, manuring them with ashes and compost manure, after which cover the whole surface of the field with a layer of pine-straw at least ten inches thick. By doing this,

all after culture is dispensed with, and they withstand more readily the effects of drought.

Of the *Jerusalem artichoke*, we are prepared from experience to speak highly. We have never seen a crop which yielded more to the acre, and we have the best evidence of their adaptation to feeding all kinds of stock. A friend of ours, in the district of Spartanburg, has fattened his hogs on this root, with the addition of a small quantity of corn, and his opinion as to its utility coincides with our own. It is true that other roots are more nutritious than the artichoke, but we would venture to take the product of an acre of it, and feed a greater number of stock, more liberally and remuneratingly than from the product of an acre planted in any other root crop. This would be the best test of its value.

In ornamenting the farm, nothing more readily beautifies it, than a tasty arrangement of cultivated trees, and handsome shrubbery. A tree planted, is an act done not only for posterity, but for the present gratification of the owner of the soil. The orchard repays attention bestowed upon it readily, and ornamental trees carefully planted out and handsomely displayed, add a permanent and increasing value to real estate. This is the proper season of the year for planting out all kinds of deciduous trees. Evergreens do not succeed well if planted in the winter.

We know of no way in which stock can be fed economically, save by preparing proper and convenient racks and troughs for them. Much food can be saved by cutting it up in straw and stalk cutters; and by steaming it and sprinkling it well with salt water. If these means are resorted to, we are confident that one-third of the food would be saved, which certainly would pay for the extra labor used in preparing it. Young cattle should be kept separate from those which are older and stronger. Good clean water is very necessary to stock in winter, and should be provided near their lots.

Sows and pigs should be particularly attended to, and well nursed. Instead of allowing them to roam over the woods and fields and lodging where it suits their convenience, prepare good pens with plenty of litter and elevated covered sleeping floors for them.—When hogs are confined and fed regularly, it requires but little to keep them in fair growing order. If they are confined, furnish them charcoal and rotten wood, to neutralize acidity and preserve the healthy tone of their stomachs.

Breeding ewes deserve particular attention, and where there is no shepherd, the flock should be visited twice a day by some observant person, who should examine the appearance of every animal.—Ewes should each have half a pint of grain, and plenty of sweet hay daily. If you have roots, alternate the plan of feeding by allowing grain one day and roots the next. This system will keep them in fine condition, and the lambs will thrive and grow off well.

We must close by reminding you that the manure *bank* is the only *bank* where the farmer should make his deposits. This should

receive all the attention he has at his command, and every spadeful of fertilizing compost which is saved, is an acre of corn made. The manure crop, is one which will never be an over crop, and the wise farmer will look to this source of prosperity, with industrious eyes and willing hands.

MANUFACTURES IN SOUTH-CAROLINA.

At a meeting held at Temperance Hall, in Charleston on the evening of the 27th Jan., for the purpose of discussing the subject of establishing Cotton Manufactures in South-Carolina, Hon. Ker Boyce was called to the Chair, and C. K. Huger, Esq., appointed Secretary.

The Chairman opened the meeting by a few appropriate observations, stating the object of the same. William Gregg, Esq., then addressed the meeting upon the advantages of manufactures as a source of investment for surplus capital in this State, and the superiority of using water over steam power. Mr. G. went at some length into the subject, and discarded upon the great advantages in an economical point of view, the South has over the North for the purpose of manufactures. Mr. Howland, being called upon by the Chairman, read a letter from Mr. Schenck, an old manufacturer of New-York, relative to Mr. Gregg's Essay on Manufactures, highly approving of the project of establishing manufactures in this State. Mr. H. then addressed the meeting upon our prospect of successfully exporting manufactured articles to foreign markets, and upon the increase of the consumption of said articles, and stated his belief of its being almost unlimited. Col. Hunt, in reply to a call from the Chair, stated some of the sources of our want of prosperity, and went on to show it was the want of occupation to a very large portion of our population, and that by the introduction of manufactures this evil would be greatly remedied, and the value of our products greatly increased.

In addition to the above, we have the satisfaction of stating that the *Graniteville Manufacturing Company* have organized themselves, and have purchased a tract of land on Horse Creek, in Edgefield District, of about 7000 acres, containing five or six mill-sites, of the best water power. And have appointed proper persons to make arrangements for building dams and digging a canal to connect the water of three of the mill-sites into one, and bring it to a point abounding with granite, and where the water will have a perpendicular descent of 30 or 40 feet, and which will be at the lowest stage of the water equal to 400 horse power.

Besides the above Company, the Legislature have Chartered two others—"the *Belvidere Manufacturing Company*," and "the *Ashley Manufacturing Company*," and others are proposed to go into operation in the neighborhood of Columbia.—*Ed.*

TO OUR SUBSCRIBERS.

We shall continue to publish the names of those generous patrons, who pay us for the *Southern Agriculturist*, because we think they are supporting a work of public utility, and performing the part of patriots. In order to assist those at a distance who have not complied with our frequent calls, we insert a method by which we may get our dues through the Post-office. An order on the Postmaster in Charleston, will be thankfully received; the following is the form:

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TO OUR CORRESPONDENTS.

We feel greatly encouraged by the aid which has come to support us, in a pecuniary way, in our undertaking; but we must regret that our Planters do not give us more of their useful communications, and not leave us to draw so freely from other Agricultural Journals. Still we hope what is published will be considered valuable.

We must go on to insist on the spread of knowledge among the young of our day; "for no human pursuit—no scientific profession is so complicated and intricate as the cultivation of the earth, and its productions;" and yet this is the knowledge requisite for the farmer; but how shall they acquire it, except through the medium of works on Agriculture, and while we endeavor to stimulate them to obtain knowledge, by laying before them what we can collect, we think we do our part in this good work. We hope none who can afford it, will refuse the expense, while they bestow such a rich boon on the youth of our land, in the perusal of an Agricultural Journal.

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